

Higher Maths  
SQA 2021 Paper 1  
Question 12



---

Points A, B, and C are collinear, with B dividing AC.

- A has coordinates  $(4, 2, -5)$
- B has coordinates  $(7, -4, 1)$
- $|\vec{BC}| = 6$

- (a) (i) Find  $|\vec{AB}|$ . 2
- (ii) State the ratio in which B divides AC. 1
- (b) Determine the coordinates of C. 1
- 

Answers:

- (a) (i) 9
- (ii) 3 : 2
- (b)  $(9, -8, 5)$